

1250312

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

November 17, 2004

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE.

APPLICATION NUMBER: 60/510,348
FILING DATE: *October 10, 2003*
RELATED PCT APPLICATION NUMBER: *PCT/US04/33194*

Certified by



Jon W Dudas

Acting Under Secretary of Commerce
for Intellectual Property
and Acting Director of the U.S.
Patent and Trademark Office

BEST AVAILABLE COPY

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. ER 443070340 US

19249 U.S. PTO
60/510348



101003

INVENTOR(S)					
Given Name (first and middle (if any))		Family Name or Surname		Residence (City and either State or Foreign Country)	
Ge Ming		Lui		55 South Kukui Street Apt 2810 Honolulu, HI 96813	
Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (500 characters max)					
Method and Composition for Tissue Culture Platforms					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number: 38551					
OR					
<input type="checkbox"/> Firm or Individual Name					
Address					
Address					
City		State		Zip	
Country		Telephone		Fax	
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification Number of Pages 2					
<input type="checkbox"/> Drawing(s) Number of Sheets					
<input type="checkbox"/> Application Date Sheet. See 37 CFR 1.76					
<input type="checkbox"/> CD(s), Number					
<input type="checkbox"/> Other (specify)					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT					
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.					
<input checked="" type="checkbox"/> A check or money order is enclosed to cover the filing fees.					
<input type="checkbox"/> The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: _____					
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
FILING FEE Amount (\$) 80.00					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

[Page 1 of 2]

Respectfully submitted,

Date October 10, 2003

SIGNATURE

REGISTRATION NO.

TYPED or PRINTED NAME Ge Ming Lui, PhD

(if appropriate)

Docket Number:

TELEPHONE 808 949 2208

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Provisional Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

BEST AVAILABLE COPY

Inventor: Ge Ming Lui
Patent Owner: Cellular Bioengineering, Inc.
1946 Young Street Suite 480, Honolulu, HI 96826 Phone: 808-949-2208

Patent 6: Method and Composition for Tissue Culture Platforms

BACKGROUND ON VARIOUS STEPS

Title: 4C - Method and Composition for Tissue Culture Platforms

Background

Brief description of what this patent describes:

This patent describes a method to produce a product line by coating conventional tissue culture lab wares such as dishes, flasks, tubes, filter inserts, chamber slides, and microcarriers beads with Diamond Like Carbon (DLC) for the growth of neural cells from human and other origins in tissue culture.

What problem(s) does this address?:

Conventional uncoated tissue culture lab wares are unable to induce attachment and growth of most neural cells of human origin.

How is this different from what's been done by others?:

This invention adds a new coating technique onto conventional lab wares to make them feasible to support the growth, proliferation and differentiation of neural cells of human and other origins.

What future applications might this have?:

The coating of lab wares with DLC may allow the in vitro culture of other hard to grow Human cells.

Specific Methods and/or Compositions

Step-by-step preferred method and/or description of composition:

Use of DLC to make tissue culture dishes, flasks, etc.

To create a specialized tissue culture platform for the growth and maintaining of neuronal cells in vitro for the purpose of propagation of cell lines and performing experiments. The DLC coating products include tissue culture dishes, flasks, slides, filter chambers, polymer beads, sheets, blocks.

Better methods or compositions if new materials or complementary methods become available:

The DLC coat can be added on top of other types of coating (such as extracellular matrix coating, adhesive molecules coating and growth factors coating to generate an improved product for specific human cell growth.

Inventive Contribution, Improvements

(List all the points of this idea you feel are novel, critical, and/or patentable.)

1. To coat conventional tissue culture lab wares with DLC coating for the in vitro culture of neural cells of human and other origins.
2. To sequentially coat conventional tissue culture lab wares with extracellular matrix, of adhesive molecules, or growth factors, and then overlay it with DLC coating to generate improved culture ware for growing human cells in vitro.

THE LAW OFFICE OF JOSEPH G. CONTRERA, ESQ.
PATENTS, COPYRIGHTS, TRADEMARKS AND LICENSING

15004 BITTERROOT WAY ROCKVILLE, MD 20853-1711
PHONE: 240-988-8763 FAX: 301-929-1254 EMAIL: JOSEPH_CONTRERA@COMCAST.NET

October 6, 2003

Dr. Hank Wuh
Cellular Bioengineering, Inc.
1946 Young Street, Suite 480
Honolulu, HI 96826

Re: Draft Claims for Application 6
Methods and Compositions for Tissue Culture Platforms
Our Ref. No.: 1003-0006

This patent describes a method to produce a product line by coating conventional tissue culture lab wares such as dishes, flasks, tubes, filter inserts, chamber slides, and microcarriers beads with Diamond Like Carbon (DLC) for the growth of neural cells from human and other origins in tissue culture.

Claims for Application 6

Methods and Compositions for Improved Tissue Culture Apparatus

1. Laboratory apparatus having a coating suitable for inducing the growth and attachment of cells comprising said apparatus having an inside and an outside surface, wherein the inside surface is the surface in contact with cells and cellular media and the inside surface of said apparatus is coated with a film of Diamond-Like-Coating.
2. The apparatus of claim 1 selected from the group consisting of cell culture dishes, petri dishes, tissue culture flasks, plates, bottles, slides, filter chambers, slide chambers, roller bottles, harvesters, and tubing.
3. Laboratory apparatus having a coating suitable for inducing the growth and attachment of cells comprising coating said apparatus with a film of Diamond-Like-Coating layered over at least one other coating.
4. The apparatus of claim 3 wherein the coating is an extracellular matrix.
5. The apparatus of claim 4 wherein the coating is BCE-ECM.
6. A method of coating laboratory apparatus suitable for inducing the growth and attachment of cells comprising applying to an inside surface a film of Diamond-Like-Coating.
7. The method of claim 6 further comprising coating the inside surface of said apparatus first with at least one other coating, such as BCE-ECM and then coating with Diamond-Like-Coating.
8. The apparatus made according to the method of claim 6 or 7.

BEST AVAILABLE COPY

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted With Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number

First Named Inventor

Ge Ming Lui

COMPLETE IF KNOWN

Application Number

Filing Date

October 10, 2003

Art Unit

Examiner Name

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Composition and Methods for Tissue Culture Platforms

(Title of the Invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT InternationalApplication Number and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				Yes	No
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.


[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

BEST AVAILABLE COPY

DECLARATION — Utility or Design Patent Application

Direct all correspondence to: <input checked="" type="checkbox"/> Customer Number: 38551		OR <input type="checkbox"/> Correspondence address below	
Name			
Address			
City		State	ZIP
Country	Telephone	Fax	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.			
NAME OF SOLE OR FIRST INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any]) Ge Ming		Family Name or Surname Lui	
Inventor's Signature 		Date October 10, 2003	
Residence: City Honolulu	State HI	Country USA	Citizenship USA
Mailing Address 55 South Kukui Street, Apt 2810			
City Honolulu	State HI	ZIP 96813	Country USA
NAME OF SECOND INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any])		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	ZIP	Country
<input type="checkbox"/> Additional inventors or a legal representative are being named on the supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.			

Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/US04/033194

International filing date: 08 October 2004 (08.10.2004)

Document type: Certified copy of priority document

Document details: Country/Office: US
Number: 60/510,348
Filing date: 10 October 2003 (10.10.2003)

Date of receipt at the International Bureau: 22 November 2004 (22.11.2004)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse

BEST AVAILABLE COPY